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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	James Weldon
Serial No.:	10/825,059
Filed:	04/15/2004
Group Art Unit:	2836
Examiner:	Patel, Dharti Haridas
Title:	AUTOMATIC MOTOR OUTPUT-TO-INPUT POWER CALCULATOR

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant now submits its brief in this appeal. Appellant previously paid appeal fees in the amount of $500.00. Appellant therefore believes that fees in the amount of $40.00 are due. The Commissioner is authorized to charge Deposit Account No. 08-0385 in the name of Hamilton Sundstrand Corporation in the amount of $40.00, as well as for any additional fees or credit the account for any overpayment.

Real Party in Interest

Hamilton Sundstrand Corporation, which is the assignee of this application, is the real party in interest. Hamilton Sundstrand Corporation is a business unit of United Technologies Corporation.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of the Claims

Claims 1-17, 19 and 21-24 are pending and on appeal.

Claims 18 and 20 have been cancelled.

Claims 25 and 26 have been withdrawn from consideration based on a restriction requirement.

Claims 1-17, 19 and 21-24 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,445,966 (the *Younger, et al.* reference).

Status of Amendments

There are no unentered amendments.

Summary of Claimed Subject Matter

There are three independent claims on appeal. Each of those claims are reproduced below including references to the specification and drawings. The references to the drawings and specification indicates how the claims read on an example embodiment of the specification.

1. A motor controller (Fig. 1, 10; page 2, line 23) comprising:
an interface for manually entering values of a motor output (Fig. 1, 14; page 2, line 25);
an input power setting determining module that automatically determines a motor input power setting based upon entered motor output values (Fig. 1, 18; page 2, lines 25-27); and
a display portion that provides a visual display of the determined motor input power setting (Fig. 1, 22; page 2, lines 27-28).

8. A machine assembly (Fig. 1, 6; page 2, line 23) comprising:
a motor having associated values of motor output (Fig. 1, 26; page 3, line 3);
a device driven by said motor (Fig. 1, 30; page 2, line 31);
an input power setting determining module that automatically determines a motor input power setting, using the associated motor output values (Fig. 1, 18; page 2, lines 25-27); and
a display portion that provides a visual display of the determined motor input power setting (Fig. 1, 22; page 2, lines 27-28).

16. A method of determining a motor input power setting comprising the steps of:
receiving values of a motor output including at least one of a motor rating value or a motor efficiency value (Fig. 3, 90; page 5, lines 24-28); and
automatically determining a motor input power setting based upon the received values of motor output (Fig. 3, 94; page 5, line 33 – page 6, line 1).

There are several dependent claims that are argued separately below. References to the specification for each of those are provided below.

Claims 2 and 9 recite that the values of motor output comprise a motor rating value (page 5, lines 25-28).

Claims 3 and 10 recite that the values of motor output comprise a motor efficiency value (page 5, lines 28-32).

Claim 4 recites that the values of motor output comprise an external current transformer value (page 3, lines 5-6).

Claims 7 and 15 recite that the interface selectively locks to prevent a user from changing a setting (page 4, lines 11-12).

Claim 17 recites displaying a determined motor input power setting (page 2, lines 27-28)

Claims 21 and 23 recite that the interface is configured to allow a user to manually confirm use of the determined motor input power setting as displayed on the display portion (page 4, lines 3-5).

Claims 22 and 24 recite an interface configured to allow a user to manually change the determined motor input power setting displayed on the display portion (page 5, lines 8-10).

Grounds of Rejection to be Reviewed on Appeal

Claims 1-17, 19 and 21-24 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,445,966 (the *Younger, et al.* reference).

ARGUMENT

There is no *prima facie* case of anticipation against any of Applicant's claims. The Examiner's interpretation of the *Younger, et al.* reference is internally inconsistent and, therefore, not reasonable. On the one hand, the Examiner contends that torque values T1 and T2, which are entered by a user, are the same as the motor output values recited in Applicant's claims. On the other hand, the Examiner contends that the same torque values T1 and T2 are motor input values that are determined based on the motor output values. The torque values T1 and T2 might be one, but they are not both. It is impossible to consider a motor output value to be the same thing as a motor input value especially when those are recited as two distinct elements of a claim.

The rejection of Claims 1-17, 19 and 21-24 under 35 U.S.C. §102(b) must be reversed.

There is no *prima facie* case of anticipation. There is nothing in the *Younger, et al.* reference that corresponds to the visual display of a determined motor input power setting as recited in claims 1 and 8. On page 3 of the final action, the Examiner states, "The manually entered values of motor output are torque T1 and T2." Those values are entered by a user and are motor output

values. (See, e.g., column 11, lines 2-35) In that sense, the Examiner's interpretation of the *Younger, et al.* reference appears reasonable.

The Examiner is incorrect, however, when the Examiner contends that the *Younger, et al.* reference "provides a visual display of the determined motor input power setting...the produced torque of the motor is then displayed in Fig. 22." (Final action, page 3) A produced torque of the motor is a motor output not a determined motor input power setting. The Examiner is contending that the torque ***output*** is a motor ***input*** power setting. An output is not the same thing as an input. Whether or not there are displayed torque values in the *Younger, et al.* reference is in one sense irrelevant. The torque output is an output and not an input. It is therefore impossible to consider a display of torque output as a display of a determined input power setting.

On page 5 and 6 of the final office action, the Examiner appears to take an opposite position. On page 5, the Examiner states, "The input power settings are torque values T1 and T2. T1 and T2 are 'determined' because initially, desired torque values are inputted by a user." The Examiner also states, "The determined T1 and T2 values are then displayed in Fig. 22." On page 6 the Examiner says, "Output torque values are entered. Determined input motor torque values are calculated then sent to the motor. The output torque is then fed back to the display for user confirmation/adjustment." The Examiner's reading of the *Younger, et al.* reference is unreasonable because it confuses "input" with "output" and it takes opposing, internally inconsistent positions with respect to the torque values T1 and T2 of the *Younger, et al.* reference.

Either the values T1 and T2 are going to be interpreted as the "manually entered values of motor output" or they are going to be interpreted as automatically "determined motor input power settings" based upon entered motor output values. The values T1 and T2 in the *Younger, et al.* reference cannot be both. Given that the Examiner is relying on the T1 and T2 values as both the

output that is entered and the input power settings, which are determined based upon the entered output, the Examiner has failed to find every limitation of the claims in the *Younger, et al.* reference.

The way that the *Younger, et al.* reference must be interpreted is that the torque values T1 and T2 are motor output values that are entered (see, e.g., column 11, line 4 and line 14). The microprocessor 48 in the *Younger, et al.* reference calculates "Initial line currents I_a, I_b and I_c necessary for AC induction motor 16 to generate such a torque." Those line currents could be interpreted as a determined motor input power setting based upon the entered torque values T1 or T2. Those line currents, however, are never displayed in any manner within the *Younger, et al.* reference. The other parameters relating to those line currents that are presumably used by the microprocessor 48 include a notch value and a delay as described, for example, in column 7, lines 16-45. There is no discussion or suggestion anywhere within the *Younger, et al.* reference for displaying those values at all.

It is no surprise that these values are not displayed because there would not be any benefit to doing that. The values that are determined responsive to a user set torque value T1 or T2 are not values that a user would have any need to see for purposes of the *Younger, et al.* arrangement to work as it is intended to work. Without any display of a determined motor input power setting based upon manually entered motor output values, there is no *prima facie* case of anticipation against any of claims 1-15.

A. <u>Claims 1, 5, 6, 8 and 11-13 are all patentable.</u>

As the *Younger, et al.* reference does not have any display of a determined motor input power setting that is based upon a manually entered motor output value, there is no *prima facie* case of anticipation against claims 1 or 8. The same reasoning applies to claims 5, 6 and 11-13.

B. **Claims 2 and 9 are separately patentable.**

Claims 2 and 9 recite that the values of motor output comprise a motor rating value. For purposes of rejecting these claims, the Examiner points to column 11, lines 5-9 of the *Younger, et al.* reference. The only thing described in that section of the reference is a determination of a notch width that is used so that the AC induction motor 16 can provide the user selected torque T1 throughout a predetermined time period t1. That is not a motor rating. A motor rating may be, for example, the horsepower rating of the motor. The calculated notch width of the portion of the *Younger, et al.* reference that the Examiner points to has nothing to do with a motor rating. Moreover, it is calculated in response to the entered motor output T1. The only other values mentioned at that point of the reference are the torque T1 and a time t1, neither of which constitutes or corresponds to a motor rating value.

There is simply no *prima facie* case of anticipation against either of claims 2 or 9.

C. **Claims 3 and 10 are separately patentable.**

When rejecting claims 3 and 10, the Examiner contends that the *Younger, et al.* reference discloses that the entered values of motor output comprise a motor efficiency value corresponding to the motor efficiency value recited in Applicant's claims 3 and 10. The Examiner points to column 7, lines 15-38, for purposes of rejecting these claims. There is nothing within that section of the reference, however, that has anything to do with a motor efficiency value. What is described in that section of the *Younger, et al.* reference is how it ramps an AC induction motor to limit variations in torque as motor speed is increased. A motor efficiency is a well known term that is not the same thing as what is described in column 7, lines 15-38 of the reference. Motor efficiency of an electrical motor is, for example, known as the ratio between the shaft output power and the

electrical input power. There is nothing of that sort described in the *Younger, et al.* reference. There is no *prima facie* case of anticipation against either of claims 3 or 10.

D. **Claim 4 is separately patentable.**

Claim 4 recites that the manually entered values of motor output comprise an external current transformer value. The Examiner does not even provide any citation to any portion of the *Younger, et al.* reference that would correspond to the limitations of claim 4. There is nothing within the reference that in any way teaches manually entering an external current transformer value. The only manually entered motor output values in the *Younger, et al.* reference are the torque values T1 and T2. Neither of those in any way correspond to or could even remotely possibly be construed as an external current transformer value. There is no *prima facie* case of anticipation against claim 4.

E. **Claims 7 and 15 are separately patentable.**

According to claims 7 and 15, the interface selectively locks to prevent a user from changing a setting of the controller. The Examiner contends that the teachings in the *Younger, et al.* reference found in column 15, lines 8-35, and column 16, lines 3-9, correspond to such a locking feature. There is nothing within those portions of the *Younger, et al.* reference (or any other portion for that matter) that corresponds to selectively locking the interface to prevent someone from changing a setting of the controller. There is no *prima facie* case against claims 7 and 15.

F. **Claim 16 is separately patentable.**

Claim 16 recites, "Receiving values of a motor output including at least one of a motor rating value or a motor efficiency value." As discussed above, there is nothing within the *Younger, et al.* reference that corresponds to the recited motor rating value or the motor efficiency value that are entered by a user. The only entries made by a user in that reference are the torque values T1 or

T2 and the time period t1. None of those correspond to a motor rating value or a motor efficiency value. Therefore, there is no possible *prima facie* case of anticipation against claim 16.

G. **Claim 17 is separately patentable.**

In addition to the reasons why claim 16 is not anticipated, claim 17 recites displaying the determined motor input power setting. As described above, the *Younger, et al.* reference does not display any determined motor input power settings. The displayed values of torque are motor output. There is no possible *prima facie* case against claim 17.

H. **Claims 21 and 23 are separately patentable.**

Each of claims 21 and 23 recite that the interface is configured to allow a user to manually confirm use of determined motor input power settings as displayed on the display portion. Given that the *Younger, et al.* reference does not display any motor input power settings, it is impossible to interpret that reference as having an interface configured to allow a user to manually confirm such information. The information is not displayed in the first instance and it is impossible to have a user manually confirm information as claimed when that information is not displayed. There is no *prima facie* case against claims 21 or 23.

I. **Claims 22 and 24 are separately patentable.**

Claims 22 and 24 include an interface configured to allow a user to manually change an input power setting from one that is displayed on the display portion. There are several reasons why these claims are not anticipated. First, as already discussed there is no display of input power settings in the *Younger, et al.* reference. Further, there is nothing that allows an individual to manually change such a setting (displayed or not). It is impossible to find teachings within the *Younger, et al.* reference that would somehow correspond to the limitations of claims 22 and 24. There is no *prima facie* case of anticipation.

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CONCLUSION

There is no *prima facie* case of anticipation against any of Applicant's claims. The basis of the Examiner's rejection is an unreasonable, internally inconsistent interpretation of the *Younger, et al.* reference. There are limitations within Applicant's claims that cannot be found anywhere within the *Younger, et al.* reference. There is no *prima facie* case of anticipation. The rejection of claims 1-17, 19 and 21-24 must be reversed.

Respectfully submitted,

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March 18, 2009
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CERTIFICATE OF FACSIMILE

I hereby certify that this Appeal Brief, relative to Application Serial No. 10/825,059, is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on March 18, 2009.

Theresa M. Palmateer

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APPENDIX OF CLAIMS

1. A motor controller comprising:

an interface for manually entering values of a motor output;

an input power setting determining module that automatically determines a motor input power setting based upon entered motor output values; and

a display portion that provides a visual display of the determined motor input power setting.

2. The motor controller as recited in claim 1, wherein said values of motor output comprise a motor rating value.

3. The motor controller as recited in claim 1, wherein said values of motor output comprise a motor efficiency value.

4. The motor controller as recited in claim 1, wherein said values of motor output comprise an external current transformer value.

5. The motor controller as recited in claim 1, including a trip module that automatically interrupts power to the motor responsive to an actual motor input power exceeding a motor input trip value that is based at least in part upon a motor output trip value.

6. The motor controller as recited in claim 5, wherein the controller automatically determines said motor input trip value based upon an entered motor output trip value.

7. The motor controller as recited in claim 1, wherein said interface selectively locks to prevent a user from changing a setting of the controller.

8. A machine assembly comprising:

a motor having associated values of motor output;

a device driven by said motor;

an input power setting determining module that automatically determines a motor input power setting, using the associated motor output values; and

a display portion that provides a visual display of the determined motor input power setting.

9. The machine assembly as recited in claim 8, wherein said values of motor output comprise a motor rating value.

10. The machine assembly as recited in claim 8, wherein said values of motor output comprise a motor efficiency value.

11. The machine assembly as recited in claim 8, wherein said device comprises a pump.

12. The machine assembly as recited in claim 8, including a trip module that automatically interrupts power to the motor responsive to an actual input power exceeding a motor input trip value that is based at least in part upon an entered motor output trip value.

13. The machine assembly as recited in claim 12, wherein the controller automatically determines said motor input trip value based upon an entered motor output trip value.

14. The machine assembly as recited in claim 8, including an interface for allowing a user to manually enter the associated values.

15. The machine assembly as recited in claim 14, wherein said interface selectively locks to prevent a user from changing a setting.

16. A method of determining a motor input power setting comprising the steps of:

receiving values of a motor output including at least one of a motor rating value or a motor efficiency value; and

automatically determining a motor input power setting based upon the received values of motor output.

17. The method as recited in claim 16, comprising displaying the determined motor input power setting.

19. The method as recited in claim 16, comprising displaying the determined motor input power setting.

21. The motor controller of claim 1, wherein the interface is configured to allow a user to manually confirm use of the determined motor input power setting as displayed on the display portion.

22. The motor controller of claim 1, wherein the interface is configured to allow a user to manually change the input power setting from the determined motor input power setting displayed on the display portion.

23. The machine assembly of claim 8, comprising

an interface configured to allow a user to manually confirm the determined motor input power setting displayed on the display portion.

24. The machine assembly of claim 8, comprising

an interface configured to allow a user to manually change the determined motor input power setting displayed on the display portion.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.